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cont.
Claim 15. The process of claim 1 wherein the extraction residue comprises the residue remaining after recovering coffee extract from roasted coffee beans used in the manufacture of instant coffee.

Claim 16. The process of claim 1 wherein the extraction residue of roasted coffee beans is substantially devoid of coffee extract, and wherein the product of fermenting the resulting mixture in the presence of said yeast for brewing alcoholic liquors has a coffee-like aroma.--

REMARKS

Reconsideration of the subject application, as amended, is respectfully requested in view of the following comments.

Claims 5 and 6 are replaced by new claims 10 and 11, respectively, claim 7 is amended to delete the parenthetical expression (reintroduced as new claim 11) and claims 9 and 13-16 are added to the application. Accordingly, upon entry of the foregoing amendments, claims 1-4 and 7-16 will be pending, and favorable reconsideration is respectfully requested.

New claim 9 is directed to the alcoholic coffee drink according to claim 8 wherein the yeast is wine yeast of the genus *Saccharomyces cerevisiae*.

Claims 13-16 are directed to alternative embodiments of the extraction residue used as the raw material in the process of claim 1. See the disclosure on page 2, second full paragraph.

There have been various grounds of formal and prior art rejections applied against the original claims. The foregoing amendments address the formal rejections which are respectfully traversed for the following reasons.

Claim 6 is rejected under 35 USC 112, first paragraph. The basis for this rejection is that since the nutrient solution is sterilized before any yeast is added the sterilization would denature any enzymes that were previously added. Therefore, according to this reasoning, the nutrient solution to which the yeast is added would not contain hydrolase.

Applicants respectfully disagree.

Claim 6 merely recited that hydrolase is added to the nutrient solution in which the yeast is cultured. One of ordinary skill in the art would certainly understand that if the nutrient solution is sterilized under conditions which would result in denaturing of hydrolase enzyme and if the hydrolase enzyme was desired to be present when the yeast is cultured, the enzyme may be added following sterilization.

Nevertheless, for clarity, and consistent with the embodiments illustrated in the working examples, e.g., Example 2, page 7, new claim 10 specifies that the extraction residue is incubated in the presence of hydrolase enzyme, e.g., Kleistase, Biodiastase, etc., and the incubated extraction residue is used in the fermentation step.

Accordingly, the rejection of claim 6 under 35 USC 112, first paragraph is respectfully traversed and/or avoided.

Claims 2 and 5 to 7 stand rejection under 35 USC 112, second paragraph, and each of the specific grounds is respectfully traversed for the following reasons.

Claim 2: this claim is considered indefinite since it is not clear how a "ground product thereof" differs from "grounds left after coffee extract is prepared."

In reply, it is simply explained that "a ground product thereof" is an alternative of roasted coffee beans and not an alternative of coffee grounds. Thus, for example, as described on page 1 of the subject application, instant coffee is prepared by extracting coffee essence from roasted and ground coffee beans and coffee drinks are obtained by first grinding roasted coffee beans and then extracting the resulting powder.

Nevertheless, it should also be possible to further grind coffee grounds, if so desired, for example, to increase surface area.

Claim 5: this claim is considered indefinite because the scope of "nutrients necessary for the growth of yeast" is considered indefinite since essential nutrients may differ depending on the environment.

In reply, Applicants note that one of ordinary skill in the art would have no difficulty in determining suitable nutrients under any environmental conditions. The essence of the invention is not in the particular nutrients used, just to assure that the yeast will adequately grow under the fermentation conditions and the skilled practitioner would not have any difficulty in determining the metes and bounds of the nutrients necessary for yeast growth.

Nevertheless, according to the new claim 10, the step of fermenting comprises culturing the resulting mixture in a nutrient solution containing said extraction residue, saccharide, yeast and growth nutrients effective for the growth of said yeast.

Claim 4: this claim is considered indefinite because no units are associated with the claimed range.

In reply, it is explained that the range recited in claim 4 is a weight ratio. Accordingly, there are no units.

Claim 7: this claim is considered indefinite because it is unclear if the parenthetical expression "(*Saccharomyces cerevisiae*)" is meant to be a claim limitation.

In reply, it is noted that the parenthetical expression is deleted from claim 7 and new claim 12 specifically recites that the wine yeast is yeast of the genus *Saccharomyces cerevisea*.

For the above reasons, the rejection under 35 USC 112, second paragraph is respectfully traversed and/or avoided.

Claim 8 is rejected under 35 USC 102(b) as anticipated by Papazian's disclosure of addition of coffee to beers. According to this rejection since the claims broadly include all extracts obtained from coffee it is considered that the beers taught by Papazian would inherently possess the extract as claimed.

Applicant respectfully disagrees.

Claim 8 is directed to the alcoholic coffee drink obtained by the process of claim 1. Claim 1 describes a process which utilizes an extraction residue of roasted coffee beans.

As described in the specification of this application the extraction residue is essentially the waste product remaining after the coffee essence is removed from the coffee beans by extraction. As such, for example, the extraction residue is totally different from the coffee obtained from freshly ground beans, or "cold extract" of coffee essence, as contemplated by Parazian. In neither case, does Parazian provide a recipe or instructions which utilizes an extraction residue of roasted coffee beans, as opposed to the extract itself.

Of course, Parazian also does not disclose or suggest adding a saccharide to the extraction residue before fermenting.

Accordingly, it is respectfully submitted that the coffee beer drink as generally described would not and could not be an anticipation of the alcoholic coffee drink as defined in claim 8.

Still further, according to the newly added claim 9, the yeast is a wine yeast. This product, therefore, has this additional distinction over the coffee beer drink of the reference.

For each of the above reasons, the rejection of claim 8 as anticipated by Papazian is respectfully traversed.

Claims 1 to 5 and 7 to 8 are rejected under 35 USC 103(a) as unpatentable over Adams et al or Papazian. According to this rejection, Adams et al teach the use of "coffee pulp" to produce wine to which substantial amounts of sugar may be added. It is suggested that coffee pulp is the residue from the initial steps performed in processing raw coffee beans. As such, Adams is considered to teach the usefulness of recycling coffee processing wastes to produce alcohol coffee drinks.

Papazian is considered to show that it would have been obvious to produce alcoholic coffee drinks from any or all parts of the coffee process including the grounds.

Applicants respectfully disagree.

First, considering the Papazian literature reference, it is submitted that this author would diametrically be opposed to using the waste material remaining after extracting the coffee extract from coffee grounds. Thus, the author refers to "the most exotic of Jamaica coffee beans," "I love good coffee," "in order to preserve the fine flavor and aroma," "freshly ground coffee" and "'cold extract' the coffee essence." It can hardly be said that Parazian would suggest using residues from which the coffee essence and fine aroma of coffee have been removed.

Therefore, contrary to the assertion forming the basis for this rejection, it is respectfully submitted that there is no disclosure or suggestion of using the raw material used by Applicant in the present invention.

Perhaps the Examiner, by virtue of the reference in claim 2 to "grounds" has misconstrued the nature of the grounds used as the raw material in the present invention. As stated fully in claim 2 it is the "residue ... [which] comprises grounds left after coffee extract is prepared" (i.e., removed). That is, the grounds which may be used as the raw material in the process of this invention are the grounds remaining after extraction of coffee essence.

This raw material is neither taught nor suggested by either of the cited references.

Thus, contrary to the assumption that the "coffee pulp" used as a raw material in alcohol production is a residue from the initial steps performed in processing raw coffee bean, Applicant explains that coffee pulp is the fleshy portion of coffee berry (fruit), i.e., flesh which remains after coffee beans (i.e., the portion corresponding to seed of coffee berry) are removed from coffee berry. As such, coffee pulp is not an extraction residue of roasted coffee beans or a ground product thereof. This is also described on page 178 of the reference wherein the author explains that the pulp consists of the fruit exocarp and most of the mesocarp, and is removed mechanically in the presence of water to produce beans.

As previously explained, the raw material extract residue used in the process of the present invention is a residue remaining after a coffee extract (hence, coffee flavor and aroma) is extracted (removed) from roasted coffee bean in the production of, for example, instant coffee, coffee drinks, and the like. As such, the extract residue differs substantially from coffee pulp in ingredients and overall composition.

It is described in the specification of this application that in the production of coffee products, such as instant coffee and coffee drinks, a very large amount of waste product is produced. This waste product which is generally discarded constitutes the raw material extract residue used in the process of this invention.

Accordingly, it is deemed to be unknown and unexpected that by fermenting an extract residue after supplementing with saccharide in the presence of yeast for brewing alcoholic beverages, the resulting alcoholic fermentation product will redevelop a coffee aroma and coffee-like flavor. That is, the use of a raw material from which substantially no coffee extract remains is not an obvious modification of the prior art. Nor for that matter is the development of a coffee-like aroma and coffee-like taste in the resulting alcoholic fermentation product produced from such a raw material in which substantially no coffee extract is present.

Indeed, nothing in the disclosure by Adams even remotely suggests that the alcohol fermentation product produced from coffee pulp possesses any coffee-like qualities. Moreover, Adams goes so far as to state that alcohol production from coffee pulp is not an effective waste disposal alternative (see page 191, last sentence).

Therefore, it is respectfully submitted that Applicant has disclosed and claims a coaction or cooperative relationship between the starting raw materials and processing conditions which produces a new, unexpected and useful function.

Accordingly, the rejection of claims 1 to 5, 7 and 8, is respectfully traversed.

Finally, claim 6 stands rejected over Adams and Papazian, as above, further in view of Suzuki, U.S. 3,845,220. Suzuki is cited for disclosing use of enzymes to modify the foaming properties of a coffee carbonated beverage. Accordingly, the addition of hydrolase for the purpose of improving the foaming properties of the alcoholic beverages of Adams or Papazian is considered an obvious modification of the prior art.

Applicant respectfully disagrees.

According to Suzuki a coffee carbonated beverage is prepared by combining enzymatically treated coffee liquid and carbonated water. The function and purpose of the added enzyme is to degrade the components of the coffee liquid, including proteins, peptides and starches, which are suggested as the cause of undesirable foaming of the carbonated beverage when the beverage is poured from a container, etc.

Since foaming is not a particular problem in the coffee wines or coffee beers of the primary references, neither of which are carbonated beverages, e.g., produced by blending with carbonated water, it is only by the benefit of hindsight that the addition of an enzyme, such as a hydrolase enzyme, in the processes of Adams or Papazian, is even remotely suggested if at all.

Certainly, the function of the hydrolase enzyme in the process of the present invention, namely, to hydrolyze polysaccharides and proteins in the extraction residue is a different function than the prevention of foaming.

For the foregoing reasons, the subject matter of claim 6 would not have been obvious in view of the cited references.

Favorable reconsideration and passage of the subject application to issue is, therefore, earnestly solicited.

Respectfully submitted,

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